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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,830	08/30/2001	Johannes Wilhelmus Maria Sonnemans	ACH2823US	9198

7590 01/22/2004  
Louis A. Morris  
Akzo Nobel Inc.  
7 Livingstone Avenue  
Dobbs Ferry, NY 10522

EXAMINER

NGUYEN, TAM M

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/942,830

Applicant(s)

SONNEMANS ET AL.

Examiner

Tam M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,7-12,14 and 18-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,7-12 and 18-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☒ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11/28/04 6) ☐ Other:

**DETAILED ACTION*****Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 28, 2003 has been entered.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3, 7-12, 14 and 18-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerritsen et al. (EP-0870817 A1) in view of either Takahashi et al. (4,845,068), Takahashi (EP-0357295 A2), or Takahashi (EP-289211 A1).

Gerritsen discloses a hydrodesulfurization process by contacting a hydrocarbon feedstock with a catalyst in one or two reaction zones. The Gerritsen feedstock is the same as the claimed feedstock and the reactions zones are operated at conditions similar to the claimed operating conditions. (See page 4, lines 2-42)

Gerritsen does not disclose that the catalyst comprises sulfur-containing organic additive. However, Takahashi (all three references) disclose a hydrodesulfurization process wherein the

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process employs a catalyst comprising metals of group VIB, VIII, and mercaptocarboxylic acids (See abstracts of all three references). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Gerritsen by using the catalyst of Takahashi because the catalyst of Takahashi is effective in a hydrodesulfurization process. It is noted that all the references do not disclose the amount of sulfur in the product stream. However, there are similarities in the modified process of Gerritsen and the claimed process in terms of catalyst, feedstock, and operation conditions. Therefore, it would be expected that the product stream would contain the amount of sulfur as claimed.

Gerritsen does not disclose that the feedstock comprises a sulfur content between about 150 ppm and 500 ppm. However, the process of Gerritsen can be operated at an amount less than 1000 ppm. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Gerritsen by using a feedstock comprising about 150-500 ppm of sulfur because one of skill in the art would use a feedstock comprises any amount of sulfur which is less than 1000 ppm including 400 ppm.

#### *Response to Arguments/Declaration*

The argument that Takahashi relates to catalysts suitable for effecting HDS involving conversion of sulfides, disulfides, thiophenes and benzothiophenes via direct sulfur extraction, as opposed to ultra deep HDS (present invention) that deals mainly with conversion of alkylated dibenzothiophenes via hydrogenation followed by sulfur extraction is not persuasive because Takahashi is not limited to thiophenes and the claimed process does not recite that the claimed

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process is an ultra deep HDS process wherein alkylated debenzothiophenes is converted via hydrogenation followed by sulfur extraction.

The argument that the catalyst of Takahashi is evidently eminently suitable for conventional HDS is not persuasive because the Takahashi catalyst is similar to the claimed catalyst. Therefore, it would be expected that the Takahashi catalyst is effective in either conventional or ultra deep HDS as the claimed catalyst.

The declaration filed on November 28, 2003 have been fully considered but it is not persuasive. The declaration discussed the differences between conventional HDS and ultra deep HDS which deals mainly with conversion of alkylated dibenzothiophenes via hydrogenation followed by sulfur extraction. However, the limitation that the claimed process is an ultra deep HDS process wherein alkylated dibenzothiophenes are converted via hydrogenation followed by sulfur extraction is not recited in the claimed. Therefore, the declaration is not commensurate in scope of the claims.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tam M. Nguyen whose telephone number is (571) 272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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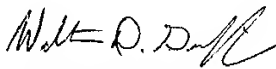
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Tam M. Nguyen  
Examiner  
Art Unit 1764

TN

  
**Walter D. Griffin**  
Primary Examiner